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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/806,518

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Phillip R. Luge

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HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P. O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER

VERBITSKY, GAIL KAPLAN

ART UNIT

PAPER NUMBER

2859

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Please find below and/or attached an Office communication concerning this application or proceeding.

8

<b>Office Action Summary</b>	<b>Application No.</b> 10/806,518	<b>Applicant(s)</b> LUGUE ET AL.	
	<b>Examiner</b> Gail Verbitsky	<b>Art Unit</b> 2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11/15/2004.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7,12,15-17,21,23-27,30 and 31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7,12,15-17,21,23-27,30 and 31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (U.S. 6163662) [hereinafter Martin].

Martin discloses in Fig. 6 a device for identifying a media type in a media processing device comprising a thermal (IR) energy source (heater) 25, a thermal energy sensor 27. The heater 25 and the sensor 27 are arranged along a media feed path 32 so as to accommodate transfer of the thermal energy to the media 18 by the heater 25, diffusion of the thermal energy, and also sensing the diffused energy to determine a heat capacity of the media, the heat capacity which, at least at some degree, is indicative of the type of the media (col. 1, lines 33-34, col. 6, lines 53-60; col. 7, lines 8-18).

As shown in Fig. 6, the heater 25 and the sensor 27 are oriented in a line parallel with the media feed path 18, the sensor 27 is being downstream from the heater 25 (col. 6, line 61, col. 7, line 2). The media-processing device is a printer (col. 3, lines 5-10).

It is also shown in Fig. 6, that the device includes a shield/ housing disposed about the heater 25 so as to direct the thermal energy generated by the heater 25

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toward the feed path, and a shield/ housing is disposed about the sensor 27 so as to direct the heat radiated from the feed path toward the sensor 27.

Although Martin does not explicitly teach that the sensor 27 is a thermocouple, the heater 25 is a resistor, the drawings appear to illustrate that a heater is a non-contact heater and non-contact sensors. The media-processing device is a printer (col. 3, lines 5-10).

In addition, Martin teaches that said printer/ media processing device comprises media feed means configured to pass media downstream along a media feed path 32, a heating means 35 disposed along the feed path 32 for applying thermal energy to the media 18 passing downstream along the media feed path 32, temperature sensing means 27 disposed along the feed path 32 downstream the heater 25 for selectively sensing temperature of the media 18 passing downstream from the heater 25, a processor means 72 coupled with the temperature sensing means 27 for receiving an output representative of the sensed temperature, determining heat capacity of the media based on the temperature, the heat capacity and the temperature, which are, inherently, at least at some degree indicative of the media type.

*With respect to "whereby"/"thereby", as stated in claim 1: it has been held that the functional "whereby" statement does not define any structure and accordingly cannot serve to distinguish. In re Mason, 114 USPQ 127, 44 CCPA 937 (1957).*

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin in view of Karlsson (U.S. 6034360).

Martin discloses the device as stated above in paragraph 2.

Martin does not teach that the heater is an infrared heater, as stated in claims 6.

Karlsson teaches that it is very well known in the art to use a resistor as a heater in an infrared radiator.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the heater, disclosed by martin, with the heater as taught by Karlsson, because both of them are alternate types of heating devices which will perform the same function, of heating the media of interest, if one is replaced with the other.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin in view of Nakamura.

Martin discloses the device as stated above in paragraph 2.

Martin does not teach the limitations of claim 7, i.e., that the sensor is a thermocouple.

Nakamura teaches to compare an unknown sample (media) to a reference sample (media) by heating them and sensing the temperature of the media of interest and the reference media by thermocouples.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the sensor, disclosed by Martin, with a thermocouple, as taught by Nakamura, because both of them are alternate types of temperature sensing devices which will perform the same function, of sensing the temperature of interest, if one is replaced with the other.

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5. Claims 12, 15, 17, 21, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin in view of Hammond.

Martin discloses the device as stated above in paragraph 2.

Martin does not teach the limitations of claims 12, in combination with the remaining limitations of claims 15, 17, 21 and 27. Although Martin measures the temperature, Martin does not explicitly teach to identify media based on sensed temperature, as stated in claim 12.

Hammond teaches to determine (identify/ authenticate) the composition (type) of an unknown sample (media) by using an authentication device 20 utilizing, among other physical properties, heat capacity and/ or temperature of the unknown sample.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Martin, so as to has somewhat an authentication device capable to identify/ authenticate the unknown sample based on the heat capacity and/ or temperature, as taught by Hammond, in order to provide the operator with necessary data, so as to allow the operator to make a decision how to use the unknown sample (media).

The method steps will be met during the normal operation of the device stated above.

6. Claims 12, 15, 17, 21, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin in view of Nakamura et al. (U.S. 5599104) [hereinafter Nakamura].

Martin discloses the device as stated above in paragraph 2.

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Martin does not teach the limitations of claims 12, in combination with the remaining limitations of claims 15, 17, 21 and 27. Although Martin measures the temperature, Martin does not explicitly teach to identify media based on sensed temperature, as stated in claim 12.

Nakamura teaches to compare an unknown sample (media) to a reference sample (media) by heating them and sensing the temperature of (thermal energy radiated from) the media of interest and the reference media by thermocouples, the, heat capacity of the media of interest could be found by comparison with the reference media (col. 7, formula 5). Therefore, the unknown media of interest could be characterized/ described. This would imply, that the unknown media could be, at least at some degree, identified. A processor 16 is coupled to both temperature sensors to selectively measure temperature and heat capacity of the media (sample).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device, disclosed by Martin, so as to use a known behavior reference, as taught by Nakamura, and well known in the art, obtaining a heat capacity which is a known thermo physical property of the sample (media), in order to accurately describe/ identify behavior of the unknown media and thus, to at least some degree, identify the media.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the sensor, disclosed by Martin, with a thermocouple, as taught by Nakamura, because both of them are alternate types of

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temperature sensing devices which will perform the same function, of sensing the temperature of interest, if one is replaced with the other.

The method step will be met during the normal operation of the device stated above.

7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin and Hammond, III ((U.S. 4381154) [hererinafter Hammond] as applied to claims 7, 12, 17, 21, 27 above, and further in view of Cernusak et al. (U.S. 6389241) [hereinafter Cernusak].

Martin and Hammond disclose the device as stated above in paragraph 5.

They do not explicitly teach the limitations of claim 25.

Cernusak teaches that it is very well known in the art to configure the processor of a media processing device to modify the parameters of the fusing subsystem, among which, the transport speed of the fusing subsystem, based on the measurements from sensors, i.e., media type sensors 405, in the media processing device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further configure the processor in the device disclosed by Martin and Hammond, so as to modify the toner fuser based on the media, as taught by Cernusak, in order to provide a proper response to the sensors, so as to prolong the life of the device and protect it from overheating related wear.

8. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin and Nakamura as applied to claims 7, 12, 17, 21, 27 above, and further in view of Cernusak et al. (U.S. 6389241) [hereinafter Cernusak].



Martin and Nakamura disclose the device as stated above in paragraph 6.

They do not explicitly teach the limitations of claim 25.

Cernusak teaches that it is very well known in the art to configure the processor of a media processing device to modify the parameters of the fusing subsystem, among which, the transport speed of the fusing subsystem, based on the measurements from sensors, i.e., media type sensors 405, in the media processing device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further configure the processor in the device disclosed by Martin and Nakamura, so as to modify the toner fuser based on the media, as taught by Cernusak, in order to provide a proper response to the sensors, so as to prolong the life of the device and protect it from overheating related wear.

9. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin and Hammond, as applied to claims 7, 12, 17, 21, 27 above, and further in view of Karlsson.

Martin and Hammond disclose the device as stated above in paragraph 5.

They do not teach that the heater is an infrared heater, as stated in claim 16.

Karlsson teaches that it is very well known in the art to use a resistor as a heater in an infrared radiator.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the heater, disclosed by Martin and Hammond, with the heater as taught by Karlsson, because both of them are alternate types of

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heating devices which will perform the same function, of heating the media of interest, if one is replaced with the other.

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin and Nakamura, as applied to claims 7, 12, 17, 21, 27 above, and further in view of Karlsson

Martin and Nakamura disclose the device as stated above in paragraph 6.

They do not teach that the heater is an infrared heater, as stated in claim 16.

Karlsson teaches that it is very well known in the art to use a resistor as a heater in an infrared radiator.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the heater, disclosed by Martin and Nakamura, with the heater as taught by Karlsson, because both of them are alternate types of heating devices which will perform the same function, of heating the media of interest, if one is replaced with the other.

11. Claims 23-24, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin in view of Hammond in view of Weiss (U.S. 4887229).

Martin discloses the device as stated above in paragraph 2.

Martin does not explicitly teach to identify the media based on temperature measurements, and the remaining limitations of claims 23-24.

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Hammond teaches to determine (identify/ authenticate) the composition (type) of an unknown sample (media) by using an authentication device 20 utilizing, among other physical properties, heat capacity of the unknown sample.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Martin, so as to has somewhat an authentication device capable to identify/ authetify the unknown sample based on the heat capacity, as taught by Hammond, in order to provide the operator with necessary data, so as to allow the operator to make a decision how to use the unknown sample (media).

Weiss discloses in Fig. 6 a device comprising a chopper (keyed or switched shield) facing a temperature sensor for selectively interrupting heat radiation flow between a body (media) of interest and the sensor. Therefore, the heat radiation (temperature) detected by the sensor is in the waveform (pulsed), as shown in Fig. 2b. A data processor 29 is adapted to analyze the pulsed signal from the sensor.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Martin, so as to have a shield/ chopper for selectively interrupting heat radiation from the body to the sensor, as taught by Weiss, in order to minimize signal-to-noise ratio, as already suggested by Weiss (entire col. 1), in order to improve accuracy of the device.

With respect to "whereby"/"thereby", as stated in claim 23: it has been held that the functional "whereby" statement does not define any structure and accordingly cannot serve to distinguish. In re Mason, 114 USPQ 127, 44 CCPA 937 (1957).

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12. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin, Hammond and Weiss, as applied to claims 23-24 and 30 above, and further in view of Pompei (U.S. 6499877).

Martin, Hammond and Weiss disclose the device as stated above in paragraph 11.

They do not teach a reference means indicating ambient temperature, so as the processor compares the ambient reference temperature and the measured temperature, as stated in claim 31.

Pompei teaches to measure a surface of interest temperature and an ambient (reference) temperature, wherein the actual temperature is based on the comparison of these two temperatures.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Martin, Hammond and Weiss, so as to use a reference temperature, as taught by Pompei, to compare to the sensed temperature, so as to provide an instant comparison with a reference, and allow instant correction (correcting factor), and thus, improving accuracy of the device.

12. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin in view of Hammond, III ((U.S. 4381154) and JP 01242947A [hereinafter JP].

Martin discloses the device in the field of applicant's endeavor. Although Martin teaches to measure physical properties of the media, i.e., heat capacity, thermal conductivity, temperature, such properties known to be indicative of the type of the

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media; Martin does not explicitly state that the media could be identified (named) based on the measured heat capacity, as stated in claim. 26.

Hammond teaches to determine (identify/ authenticate) the composition (type) of an unknown sample (media) by using an authentication device 20 utilizing, among other physical properties, heat capacity of the unknown sample.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Martin, so as to has somewhat an authentication device capable to identify/ authetify the unknown sample based on the heat capacity, as taught by Hammond, in order to provide the operator with necessary data, so as to allow the operator to make a decision how to use the unknown sample (media).

JP teaches a device for determining a heat capacity of a sample by heating one surface (heated patch) of the sample, while another surface (unheated patch) is not heated. JP obtains temperature difference (rise) from heated and unheated patches and heat capacity is calculated (measured).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Martin, so as to heat one portion of the sample (media) and by obtaining temperature difference between the portions, determine heat capacity of the sample (media), as taught by JP, because the heat capacity is known to depend on temperature, on the other hand, it is a thermo physical parameter characterizing the sample property.

***Response to Arguments***

13. Applicant's arguments with respect to claims 1-7, 12, 15-17, 21, 23-27, 30-31 have been considered but are moot in view of the new ground(s) of rejection.

Applicant states that Martin does not teach identifying media based on heat capacity of the media. This argument is not persuasive because this limitation is not stated in claim 1. It is the claims that define the claimed invention, and it is claims, not specification that are anticipated or unpatentable. Constant v. Advanced Micro-Devices, Inc., 7 USPQ2d 1064.

Applicant states that Nakamura does not teach to identify the media. This argument is not persuasive because Nakamura characterizes, describes the media based on calculated heat capacity, therefore, Nakamura, at least at some degree is capable to identify the media by knowing the trends in the media's behavior and how said media is different from a known sample. Also, Applicant has never described "identification" as a proper name to the media, but a type of the media. It is inherent that, different medias have different thermal response to heating, i.e., temperature and heat capacity.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Any inquiry concerning this communication should be directed to the Examiner Verbitsky who can be reached at (571) 272-2253 Monday through Friday 8:00 to 4:00 ET.

GKV

Gail Verbitsky

Primary Patent Examiner, TC 2800

